09/701622

529 Rec'd PCT/PTO 01 DEC 2000

17. Biomedical polyurethane based on diisocyanate linked polyester polymer and diol components, said diol component having a uniform block-length.

18. Biomedical polyurethane according to claim 17, having the following formula:

$$\left(A - B - C - B \right)_n$$

wherein the B denotes diisocyanate moieties, A denotes a polyester moiety, C denotes a diol moiety and n is the number of recurring units.

19. Biomedical polyurethane according to claim 17 consisting of repeating units of the following formula

$$\left\{ C(O) - NH - R_1 - NH - C(O) - O - D - O - C(O) - NH - R_1 - NH - C(O) - O - E - O \right\}_n ,$$

wherein R_1 is an n-butylene moiety, D is a polyester moiety, E is an n-butylene diol, an n-hexylene diol or a diethylene glycol based moiety and n indicates the number of repeating units.

20. Polyuretnane according to claim 17, wherein E is diol or an XYX reaction product of diol (X) and 1,4-butane-diisocyanate (Y).

21. Polyurethane according to claim 17, wherein the blocklength is the same for at least 90%, more in particular at least 95% of the diol units.

22. Polyurethane according to claim 17, wherein the polyester is based on a polyester prepared by ringopening polymerization, preferably a random copolyester.

23. Polyurethane according to claim 22, wherein the random copolyester is a copolyester of lactide, glycolide, trimethylene carbonate and/or ε-caprolacton.

24. Polyurethane according to claim 17, wherein the polyester is based on lactic acid, succinic acid, diethylene glycol, 1,4-butanediol, 1,6-hexanediol and/or diethylene glycol.

25. Polyurethane according to claim 17, obtainable by a process comprising reacting the polyester and an isocyanate endcapped diol component, the ratio of polyester endgroups to isocyanate groups being at least two, followed by reacting the resulting prepolymer with water.

26. Polyurethane according to claim 25, based on a copolyester of lactide and ε-caprolacton containing 5 to 95, preferably 40-60 % of units of lactide and 5 to 95, preferably 40-60 % of units of ε-caprolacton, based on number.

27. 1,4-Butanediol, 1,6-hexane diol, or diethyleneglycol based diol component having a uniform blocklength, said component being an XYX reaction product of diol (X) and 1,4-butane-diisocyanate (Y).

28. Process for the preparation of a biomedical polyurethane according to claim 17, wherein the diol component is reacted with the reaction product of at least two moles of diisocyanate and the polyester.

29. Process for the preparation of a biomedical polyurethane according to claim 28, wherein the diol component is reacted with the reaction product of at least two moles of diisocyanate and the polyester.

30. Process for the preparation of a biomedical polyurethane according to claim 17, wherein the random copolymer is reacted with the reaction product of at least two moles of diisocyanate and the diol component.

31. Implants based on the biomedical polyurethanes according to claim 17, having a porosity of 50 to 99 vol. %.

32. Use of a polyurethane according to claim 17, as biodegradable polymer implant in meniscus reconstruction.

33. Biomedical polyurethane having a phase separated morphology, comprising soft segments of polyester and/or polyether components and hard segments, said hard segments consisting of diol component having a uniform block length, and wherein the diol component on the one hand and the polyester and/or polyether components on the other hand, have been linked by diisocyanate, preferably an aliphatic diisocyanate.